

Module One Peak Sports Nutrition FUELLING PEAK PERFORMANCE Workbook

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Peak Sports Nutrition

Introduction

Each of you has decided to join this course for a particular reason. Perhaps it is get the most out of your training, to go faster or further, to maintain your health and fitness or to improve your knowledge. Whatever the reason, when you boost your performance through nutrition, your whole life can change. But you need the expert knowledge and tools to do this.

Right now is important to you because you only get one body. Having a healthy highperforming body is the cornerstone to everything that you do.

You have to do the preparing before you can do the doing

When you are considering making changes to or fine-tuning what you eat – it is vital that you know how you are going to do that with the correct information.

We are all under daily time and human resource pressure at work and home too... this means that you might be in the position where the preparing and the doing are not happening. This becomes evident with unhealthy eating, not enough exercise, lack of sleep, too much stress or low immunity.

If we tried to do all the things that the media, bloggers, celebrities and even friends and family suggest to do to live a healthy life and eat well, it would be a full-time job. Quite often the mere thought of the number of things this quite literally entails is truly overwhelming - with the end result being no action and you not doing a single one of them. Think about the things we are told that we should do each day.....drink a green smoothie, chuck turmeric in everything you possibly can, eat two fruit and five vegetables every day, eat breakfast, eat lunch away from your desk, drink two litres of water every day, don't drink too much coffee, eat only raw food... the list goes on.

The thing is – these days we operate as octopuses, so it's not entirely surprising that we drop some good habits when we don't have quite as many appendages as they do.

Many of us (especially the females - including me) believe that we have multi-tasking completely sorted but it is a reality that our brains do not work best this way. When I see the spinning wheel of death on my computer screen, I know that I have way too much going on – it's a very similar scenario in our brains and bodies. Have you tried brushing your teeth with your non-dominant hand?

This is when our good habits and intentions in relation to eating well whilst training and being active take a back seat.

When making changes to our health habits, in the beginning we often feel as though we need to multi-skill on a daily basis to manage our physical and mental performance but this becomes easier as time goes on.

The thing is, sometimes our perception of effort required to make these happen is not reality. Making changes to our lives to enhance our performance, health and well-being doesn't need to be as complicated as we try and make them.

Personal Performance

How your body and brain perform every day is dependent on a number of factors:

- Physical (like flexibility and agility)
- Mental (attitude, focus, concentration and strategy)
- Nutrition (Did you eat breakfast? Did you get some caffeine at morning tea to enhance performance?)
- Your stress levels and how your day has been so far.
- Sleep (or the lack of it!)

It is interesting to look at what 'performance' actually means and of course, to get that definition you would go to the most 'accurate' source – Wikipedia. I say that tongue in cheek obviously but Wikipedia defines performance as the ability to perform useful work within a specified amount of time and number of resources. 'Betterer' performance (if there is such a word) means performing the same task with less time and resources.

I then turned to 'Juliepedia' for a more accurate and friendly definition of performance and it could be described as:

'The ability to manage energy levels across work and recreational time while maintaining concentration and skill levels for whatever training or task is required" ... and not falling in a heap at the end of the day.

What is your definition of performance?

It is one thing to perform but quite another to achieve success.

Elite athletes possess attributes that YOU need to perform at your best. Some of these include:

- ★ Endurance
- ★ Agility
- ★ Flexibility
- ★ Core and inner strength
- ★ Mental resilience
- ★ Finely tuned skills
- ★ Intuition
- ★ Organisational skills
- ★ Focus and determination
- ★ Strategy
- ★ Persistence

The type of athlete you are – elite, recreational, amateur or weekend warrior is irrelevant – wanting to achieve your own personal best is universal and the same principles apply.

What are the challenges that directly affect your ability to manage your health and well-being?

Current challenges that you may face on a daily basis are:

- ★ High expectations (and sometimes unrealistic) of others
- ★ Resources available (manpower and time)
- ★ Family commitments (husband or partner, young children, parents)
- ★ Fitting in training (essential from a physical and mental perspective)
- ★ Fatigue
- ★ Frequent travel
- ★ Social commitments
- ★ Competing priorities

What are your challenges?

Nutrition - the truth about calories, kilojoules, micros & macros

The concept of energy in vs. energy out is pivotal to a healthy high performing body, to recovery and renewal and the ability to focus and concentrate.

As we all know, energy can be an expression of how you feel and how much 'get up and go' you have.

However, the technical way we measure energy in food (in) and out (expenditure) is by calories or kilojoules.

1 calorie = 4.2 kilojoules

Calories or kilojoules are essentially our petrol to run the 'car', also known as the human body.

It doesn't matter whether you use calories or kilojoules, it is personal preference.

<u>However</u>, there is no getting around the fact that there has to be some accountability for calories or kilojoules for weight maintenance or loss.

Calories and kilojoules are derived from fat, alcohol, protein and carbohydrate and this is where we get our food energy.

Activity - Track your calories

I would like you to track your calories in vs. calories out over the next week. The best apps to use are Control My Weight by Calorie King and My Fitness Pal. The links to both of these are at the back of the workbook. It is interesting to see if your intake vs. output match and often how surprising total daily calorie intakes are.

Food Energy per gram

Nutrient	Energy per gram
Fat	37 kJ (9 cal)
Alcohol	29 kJ (7 cal)
Protein	17 kJ (4 cal)
Carbohydrate	16 kJ (4 cal)

You have probably read or heard people talk about 'macros' and this is what these nutrients are. The micros are the vitamins and minerals that we need daily but in much smaller amounts. It is important that we focus on each of these things instead of just making up the total daily calorie/kilojoule intake in whatever way we can.

Our energy requirements are individual and dependent on age, activity level, weight and height. It is true that the body does not treat the above nutrients equally. There is a standard equation for calculating calorie requirements, which we won't go into today but that is the only way to correctly determine total energy intake. It is possible to get metabolic rate measured in a laboratory but this is time consuming, expensive and not practical for the general population. Both of the apps we have talked about will give you an estimate, which is close enough.

If alcohol has been consumed, it is the top priority as a fuel source. This means that it is used as petrol by your body in preference to fat, protein and carbohydrate. If fat is also being consumed at the same time, perhaps in the form of nuts and chips at the pub on a Friday night after work, then the fat consumed will be diverted into fat storage more efficiently.

Carbohydrate and protein calories that are in excess of our needs are used for energy and displace fat as an energy source. This means that they are the second priority for energy use. Carbohydrate is stored in the muscle and liver and the capacity for storage is quite low, whereas protein stores are mainly in the muscle and their size is dependent on need. Carbohydrate and protein are the main regulators of appetite and produce the feeling of 'being full.' This leaves fat as the last priority for fuel or petrol use and has the greatest storage capacity.

Managing Energy

1. Carbohydrates - friend or foe?

Where do we find it?

Cereals, pasta, rice, some fruit, potato, sweet potato and corn, milk, yoghurt and legumes. All carbohydrates eventually get broken down into glucose.

What is the function of carbohydrate?

Carbohydrates are our instant source of energy and the preferred fuel of the brain.

Storage

In the muscles and liver with the amount stored being dependent on muscle capacity, intake of carbohydrate, presence of muscle damage and training levels.

Digestion and Absorption

As carbohydrate foods are digested and absorbed the blood glucose level rises and this promotes the release of insulin, which in turn promotes the storage of glucose into cells and lowers blood sugar levels. Insulin also promotes the storage of fatty acids (triglycerides) and amino acids (protein).

Are all carbohydrates equal?

Carbohydrates used to be classified as simple and complex based on speed of digestion. It was assumed that 'simple' carbs were digested quickly (lollies, soft drink, cordial, honey etc) and 'complex' carbs were digested slowly (breads, cereal, rice and pasta, fruit and vegetables). We know that they do not fit neatly into these categories and research has progressed.

We know that carbohydrate foods can be classified according to how quickly it is digested and absorbed into blood as glucose and this is know as the Glycaemic Index (GI). 50 g of the test food is eaten and the effect on blood glucose levels is measured. All test foods are compared to 50g glucose, which has a GI of 100. Low GI foods are digested and absorbed slowly and high GI foods quickly, with single foods having a range of GI's depending on their brand. Many aspects of a meal can affect the overall GI including fat, fibre, protein, cooking methods and processing of the food.

Basically, if you eat minimally processed and higher fibre foods such as fruits and vegetables and wholegrain cereals with minimal 'treats or sometimes foods' your diet is likely to be low in GI. These types of foods tend to be more filling allowing you to better able control your appetite and control body fat.

Will carbohydrate cause weight gain?

Carbohydrate is very efficiently stored as glycogen but rarely are the storage tanks (muscle and liver) full. If they are, any excess carbohydrate will be stored as fat. The conversion of carbohydrates to fat is very slow and inefficient.

It is possible but difficult to eat excess carbohydrate if predominantly lower GI (greater than 800g daily); your body reacts by using this excess as fuel and storing any dietary fat as body fat. You need to think about the fat that may be associated with carbohydrate foods too e.g. cakes and biscuits.

2. Protein

Protein is a very controversial issue in the sports arena – should athletes be eating more than the average Australian?

Protein is essential in the development of muscle and other cells but if an athlete is consuming adequate total energy (kJ or kcal) they will often be getting enough protein.

Protein is made up of amino acids, which are just like building blocks similar to Lego and they are either essential or non-essential. Essential AA cannot be manufactured by the body and must be consumed through diet.

There is a misconception that protein supplements and powders are more effective than food.

There can be problems with excess intake – dehydration, excess calories and then fat weight gain. Protein accounts for 3-5% of energy production during exercise – there is no scientific evidence that proves protein is beneficial during exercise. However, it is important for recovery, which we will talk about later in this program.

3. Fats

What role does it have to play in sport?

- Concentrated source of energy but not readily available to exercising muscles
- Can increase body weight and decrease agility and speed
- Fat may take the place of much needed carbohydrate and therefore decreasing energy levels
- Increased risk of lifestyle diseases such as diabetes and cancer

There are two types of fat in your diet. The kind you can see and the kind you can't. Fat that you can see includes:

- a. Fat and skin on meat and chicken
- b. Butter, margarine and other oils

The fats that you can't see are in:

- \star Cakes, biscuits and chocolate
- ★ Dairy products
- ★ Eggs
- ★ Nuts
- ★ Pastry

The three main groups of fats are:

- ★ Saturated
- ★ Polyunsaturated
- ★ Monounsaturated

We all have a certain amount of energy to spend but are you budgeting?

Your tasks for this week are:

- ★ Get a blood test done if you haven't had one in the past 12 months. The list of what to include is listed on the assessment form on the membership site.
- ★ Measure your current height and weight
- ★ Start tracking. Keep a record of your food intake over the next week and compare this to your energy requirements using a tool such as <u>My Fitness Pal</u> or <u>Calorie</u> <u>King</u>
- ★ All of this information can be recorded on the *Participant Information Sheet* located in the member's section of the Fuelling Peak Performance program

The most effective way to do it,

is to do it.

- Amelia Earhart, aviation pioneer

Resources

- My Fitness Pal
- <u>Calorie King</u>